



Psychometric Properties of Three Simplified Chinese Online-Related Addictive Behavior Instruments Among Mainland Chinese Primary School Students

I-Hua Chen^{1,2†}, Daniel Kwasi Ahorsu^{3†}, Amir H. Pakpour^{4,5}, Mark D. Griffiths⁶, Chung-Ying Lin^{3,7*} and Chao-Ying Chen³

OPEN ACCESS

Edited by:

Elias Aboujaoude,
Stanford University, United States

Reviewed by:

Domenico De Berardis,
Azienda USL Teramo, Italy
Deena Marie Walker,
Oregon Health and Science University,
United States

*Correspondence:

Chung-Ying Lin
cylin36933@gmail.com

[†]These authors have contributed
equally to this work

Specialty section:

This article was submitted to
Addictive Disorders,
a section of the journal
Frontiers in Psychiatry

Received: 17 March 2020

Accepted: 11 August 2020

Published: 03 September 2020

Citation:

Chen I-H, Ahorsu DK, Pakpour AH,
Griffiths MD, Lin C-Y and Chen C-Y
(2020) Psychometric Properties of
Three Simplified Chinese Online-
Related Addictive Behavior
Instruments Among Mainland Chinese
Primary School Students.
Front. Psychiatry 11:875.
doi: 10.3389/fpsy.2020.00875

¹ Chinese Academy of Education Big Data, Qufu Normal University, Shandong, China, ² School of Education Science, Minnan Normal University, Zhangzhou, China, ³ Department of Rehabilitation Sciences, Faculty of Health and Social Sciences, The Hong Kong Polytechnic University, Hong Kong, Hong Kong, ⁴ Social Determinants of Health Research Center, Research Institute for Prevention of Non-Communicable Diseases, Qazvin University of Medical Sciences, Qazvin, Iran, ⁵ Department of Nursing, School of Health and Welfare, Jönköping University, Jönköping, Sweden, ⁶ International Gaming Research Unit, Psychology Department, Nottingham Trent University, Nottingham, United Kingdom, ⁷ Institute of Allied Health Sciences, College of Medicine, National Cheng Kung University, Tainan, Taiwan

Background/Objective: There are inadequate screening instruments for assessing specific internet-related addictions among mainland Chinese primary school students. Therefore, the present study validated the psychometric properties of three simplified Chinese online-related addictive behavior instruments among mainland Chinese primary school students.

Method: Fourth to sixth graders ($n = 1108$; 48.3% males; mean [SD] age = 10.37 years [0.95]) completed the nine-item Internet Gaming Disorder Scales-Short Form (IGDS-SF9), Bergen Social Media Addiction Scale (BSMAS), and Smartphone Application-Based Addiction Scale (SABAS) in a classroom. The factorial structures and the unidimensionality of the three scales were examined using confirmatory factor analyses (CFAs). Measurement invariance of the three scales was examined using multigroup confirmatory factor analyses (MGCFA) across gender.

Results: The findings demonstrated that the three scales (Cronbach's $\alpha = 0.73$ to 0.84) had unidimensional structure as supported by satisfactory fit indices (comparative fit index = 0.98 to 1.00). The MGCFA findings indicated that the unidimensional structures of the three scales were invariant across gender.

Conclusions: The findings indicate that the three simplified Chinese scales (IGDS-SF9, BSMAS, and SABAS) are valid instruments for assessing online-related addictive behaviors among mainland Chinese primary school students irrespective of their gender.

Keywords: child technology use, gaming addiction, psychometrics, social media addiction, smartphone addiction